Level 3 – Application Development Duration: 3 Hours

General Instructions

1. Read all the questions and understand them clearly before you start writing the program. In case of any doubts, get them clarified with your invigilator.

2. You can write your program using C or Java

3. The input for the program can be hard coded or read from a file. Command line inputs are not required.

4. Once you arrive at a logic, discuss with your invigilator before proceeding.

5. Programs logic, coding standards, modularity will be considered for evaluation.

6. Your Program should work for various inputs as given by your invigilator and verify the output of the program before showing it to the invigilator.

7. Take one task at a time and show the output case by case. The output shown should be well intended and not congested.

8. Create a folder in the desktop with your name followed by department and save the source files there. Ex. folder name Arun_ECE, Geetha_CSE

Employee Database

You are to create and maintain an Employee Database. You are given a pre-defined set of Employee data, which can be hard coded in any data structure, to start with and once all the tasks are completed, the data should be fed in from a file.

Note : You are to use only the data given below.

ID	Name	Age	Department	Designation	Reporting To
1	Sriram	45	Management	CEO	--
2	Mukund	42	HR	HR Manager	Sriram
3	Sebastian	38	Finance	Finance Manager	Sriram
4	Aashritha	32	Product Management	Dev Manager	Sriram
5	Mohammad Rafi	35	HR	HR Lead	Mukund
6	Anjali Kumar	29	HR	HR Associate	Mohammad Rafi
7	Joseph	40	Finance	Finance Associate	Sebastian
8	Ramachandran	27	Product Development	Tech Lead	Aashritha
9	Abhinaya Shankar	23	Product Development	System Developer	Ramachandran
10	Imran Khan	28	Product Testing	QA Lead	Ramachandran

Your program should list the following options initially and upon selecting one, it should print the desired output

Initial Menu

1. Show all Records
2. Search Records
3. Manager Report
4. Reporting to Tree
5. Summary of Records

Task 1 : Show all Records

1. List all the records of the table, printing Name, Age, Designation, Department and Reporting To.
2. Print each record in a single line.

Task 2 : Search Records

1. List out all possible search fields like Name, Age, Department, Designation and Reporting to as options.

2. Based on the data type of the selected field, show the possible criteria
    - Equals, Not Equals, Starts With, Ends With, Contains and Not Contains for String
    - >, <, =, != and between for Numerical fields
3. Ask for adding another criteria to step 1 and if chosen, repeat step 1. Use “AND” for multiple criteria.
4. Show the output in tabular format.

Task 3 : Manager Report

1. List Employees under a Reporting Manager. Manager Name will be given as input.

Task 4 : Reporting to - Tree

1. Show the “Reporting To” tree for an employee name given as input
   Ex : for Imran Khan, Imran Khan -> Ramachandran -> Aashritha -> Sriram

Task 5 : Summary Reports

1. Show all departments summary – *Department Name and Employee Count*
2. Show all Designation Summary – *Designation Name and Employee Count*
3. Show all Managers Summary – *Manager Name and Employee Count under a manager*